Textbook Alignment to the Utah Core – Algebra 2

This alignment has been completed using an "Independent Alignment Vendor" from the USOE approved list (www.schools.utah.gov/curr/imc/indvendor.html.) ***Yes N/A No N/A***

Name of Company and Individual Conducting Alignment:
Richard Bolster

A "Credential Sheet" has been completed on the above company/evaluator and is (Please check one of the following):

☐ **On record with the USOE.**

X The "Credential Sheet" is attached to this alignment.

Instructional Materials Evaluation Criteria (name and grade of the core document used to align): Algebra 2 Core Curriculum

Title: Intermediate Algebra, 5th Edition (c) 2009, (Martin-Gay) ISBN#: 0131355163 (SE); 0136007309 (AIE);

Publisher: Pearson Education Inc. publishing Prentice Hall

Overall percentage of coverage in the *Student Edition (SE) and Teacher Edition (TE)* of the Utah State Core Curriculum: 69%

Overall percentage of coverage in *ancillary materials* of the Utah Core Curriculum: N/A

STANDARD I: Students will use the language and operations of algebra to evaluate, analyze and solve problems.

Percentage of coverage in the *student and teacher edition* for Standard I: 93 %		**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard I: N/A**	
OBJECTIVES & INDICATORS	**Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	***Not covered in TE, SE or ancillaries***

Objective 1.1: Evaluate, analyze, and solve mathematical situations using algebraic properties and symbols.			
a. Solve and graph first-degree absolute value equations of a single variable.	**SE/TE: 95-99, 111**		
b. Solve radical equations of a single variable, including those with extraneous roots.	**SE/TE: 450-459, 471**		
c. Solve absolute value and compound inequalities of a single variable.	**SE/TE: 88-94, 100-106, 111-112**		
d. Add, subtract, multiply, and divide rational expressions and solve rational equations.	**SE/TE: 343-346, 351-356, 385-392, 403, 405-406**		
e. Simplify algebraic expressions involving negative and rational exponents.	**SE/TE: 258-260, 262-264, 421-428, 469**		
Objective 1.2: Solve systems of equations and inequalities.			
a. Solve systems of linear, absolute value, and quadratic equations algebraically and graphically.	**SE/TE: 204-215, 215-222, 235-240, 245-250, 62--624**		
b. Graph the solutions of systems of linear, absolute value, and quadratic inequalities on the coordinate plane.	**SE/TE: 242-245, 249**		
c. Solve application problems involving systems of equations and inequalities.	**SE/TE: 222-234, 251**		
Objective 1.3: Represent and compute fluently with complex numbers.			
a. Simplify numerical expressions, including those with rational exponents.	**SE/TE: 17-24, 254, 269-270**		

b. Simplify expressions involving complex numbers and express them in standard form, a + bi.	**SE/TE: 460-467, 472**		
Objective 1.4: Model and solve quadratic equations and inequalities.			
a. Model real-world situations using quadratic equations.	**SE/TE: 488-489, 494-495, 497-499, 503-509**		
b. Approximate the real solutions of quadratic equations graphically.	**SE/TE: 486, 499**		
c. Solve quadratic equations of a single variable over the set of complex numbers by factoring, completing the square, and using the quadratic formula.	**SE/TE: 317, 324-325, 480, 482-484, 487-488, 489-492, 494-499**		
d. Solve quadratic inequalities of a single variable.	**SE/TE: 511, 513-515, 626, 628**		
e. Write a quadratic equation when given the solutions of the equation.			Not covered

STANDARD II: Students will understand and represent functions and analyze function behavior.

Percentage of coverage in the *student and teacher edition* for Standard II: 94 %		**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard II: N/A**	
OBJECTIVES & INDICATORS	**Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	***Not covered in TE, SE or ancillaries***
Objective 2.1: Represent mathematical situations using relations.			
a. Model real-world relationships with functions.	**SE/TE: 531, 620-621**		
b. Describe a pattern using function notation.	**SE/TE: 637-640**		
c. Determine when a relation is a function.	**SE/TE: 131-135, 141-143, 193**		

d. Determine the domain and range of relations.	**SE/TE: 130-131, 134-135, 141-143, 185, 193, 558, 570**		
Objective 2.2: Evaluate and analyze functions.			
a. Find the value of a function at a given point.	**SE/TE: 122, 136-139, 143, 145-146**		
b. Compose functions when possible.	**SE/TE: 542-546**		
c. Add, subtract, multiply, and divide functions.	**SE/TE: 541-542, 544-545**		
d. Determine whether or not a function has an inverse, and find the inverse when it exists.	**SE/TE: 550-557**		
e. Identify the domain and range of a function resulting from the combination or composition of functions.			Not covered
Objective 2.3: Define and graph exponential functions and use them to model problems in mathematical and real-world contexts.			
a. Define exponential functions as functions of the form $y = ab^x, b > 0, b \neq 1$.	**SE/TE: 557**		
b. Model problems of growth and decay using exponential functions.	**SE/TE: 561-564, 587-590**		
c. Graph exponential functions.	**SE/TE: 557-559, 563, 584**		
Objective 2.4: Define and graph logarithmic functions and use them to solve problems in mathematics and real-world contexts.			
a. Relate logarithmic and exponential functions.	**SE/TE: 565-568, 571-572**		

b. Simplify logarithmic expressions.	**SE/TE: 569, 573-577, 579, 597**		
c. Convert logarithms between bases.	**SE/TE: 582-584**		
d. Solve exponential and logarithmic equations.	**SE/TE: 559-563, 567-568, 578, 583, 585-590, 597**		
e. Graph logarithmic functions.	**SE/TE: 569-570, 572, 584**		
f. Solve problems involving growth and decay.	**SE/TE: 561-564, 584, 587-590, 598**		

STANDARD III: Students will use algebraic, spatial, and logical reasoning to solve geometry and measurement problems.

Percentage of coverage in the *student and teacher edition* for Standard III: 40%		**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard III: N/A**	
OBJECTIVES & INDICATORS	**Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	***Not covered in TE, SE or ancillaries***
Objective 3.1: Examine the behavior of functions using coordinate geometry.			
a. Identify the domain and range of the absolute value, quadratic, radical, sine, and cosine functions.	**SE/TE: 134-135, 141-143, 184-185**		Sine and cosine functions are not covered.
b. Graph the absolute value, quadratic, radical, sine, and cosine functions.	**SE/TE:178-180, 183**		Sine and cosine functions are not covered.
c. Graph functions using transformations of parent functions.	**SE/TE: 180-184, 196, 514, 516-519, 523**		
d. Write an equation of a parabola in the form $y = a(x - h)^2 + k$ when given a graph or an equation.	**SE/TE: 524-526, 529-530**		
Objective 3.2: Determine radian and degree measures for angles.			
a. Convert angle measurements between radians and degrees.			Not covered

b. Find angle measures in degrees and radians using inverse trigonometric functions, including exact values for special triangles.			Not covered
Objective 3.3: Determine trigonometric measurements using appropriate techniques, tools, and formulas.			
a. Define the sine, cosine, and tangent functions using the unit circle.			Not covered
b. Determine the exact values of the sine, cosine, and tangent functions for the special angles of the unit circle using reference angles.			Not covered
c. Find the length of an arc using radian measure.			Not covered
d. Find the area of a sector in a circle using radian measure.			Not covered

STANDARD IV: Students will understand concepts from probability and statistics and apply statistical methods to solve problems.

Percentage of coverage in the *student and teacher edition* for Standard IV:_____0_____ %	**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard IV: _____%**

OBJECTIVES & INDICATORS	**Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	***Not covered in TE, SE or ancillaries***
Objective 4.1: Apply basic concepts of probability.			
a. Distinguish between permutations and combinations and identify situations in which each is appropriate.			Not covered

b. Calculate probabilities using permutations and combinations to count events.			Not covered
c. Compute conditional and unconditional probabilities in various ways, including by definitions, the general multiplication rule, and probability trees.			Not covered
d. Define simple discrete random variables.			Not covered
Objective 4.2: Use percentiles and measures of variability to analyze data.			
a. Compute different measures of spread, including the range, standard deviation, and interquartile range.			Not covered
b. Compare the effectiveness of different measures of spread, including the range, standard deviation, and interquartile range in specific situations.			Not covered
c. Use percentiles to summarize the distribution of a numerical variable.			Not covered
d. Use histograms to obtain percentiles.			Not covered